

Eventlabel	JUB2010_sel_a_m_04
Campaign	King George Island 2010
Species	Southern elephant seal (<i>Mirounga leonina</i>)
Age	Adult; >6 years ~9
Sex	Male
Number	
Length	409 cm
Girth	
Weight [estimated]	2200
Weight [calculated]	1959 kg http://doi.pangaea.de/10.1594/PANGAEA.737046
Weight [measured]	
ARGOS PTT ID	96501
Transmitter type	SMRU/Series 9000 SRDL/CTD
Manufacturer	SMRU
PTT Serial Number	11211
PTT Software	Software specification for CTD_GEN_07B deployment (MEOP: Temp+Salinity share 2 tx)
Setting protocol	<div>Transmitting via ARGOS</div> <div>Page transmission sequences:</div> <div>Until day 1464: 0 0 1 0 0 2 3 0 0 4 5 using 1 PTT numbers</div> <div>Satellite availability (UTC):</div> <div>00: -- on --</div> <div>01: -- on --</div> <div>02: -- on --</div> <div>03: -- on --</div> <div>04: -- on --</div> <div>05: -- on --</div> <div>06: -- on --</div> <div>07: -- on --</div> <div>08: -- on --</div> <div>09: -- on --</div> <div>10: -- on --</div> <div>11: -- on --</div> <div>12: -- on --</div> <div>13: -- on --</div> <div>14: -- on --</div> <div>15: -- on --</div> <div>16: -- on --</div> <div>17: -- on --</div> <div>18: -- on --</div> <div>19: -- on --</div> <div>20: -- on --</div> <div>21: -- on --</div> <div>22: -- on --</div> <div>23: -- on --</div> <div>Transmission targets:</div> <div>56000 transmissions after 365 days</div> <div>In Haulouts: ON (one tx every 1 min 20 secs) for first 5 hours then cycling OFF for 6 hours, ON for 1 hour</div>

	<p>Check sensors every 4 secs When near surface (shallower than 10m), check wet/dry every 1 sec Consider wet/dry sensor failed if wet for 7 days or dry for 99 days Dives start when wet and below 6m for 8 secs and end when above 6m for 0, or dry at any time No separation of 'Deep' dives A cruise begins if there has been no dive for 9 mins A haulout begins when dry for 10 mins and ends when wet for 40 secs</p> <p>Dive shape (normal dives): 4 points per dive using broken-stick algorithm</p> <p>Dive shape (deep dives): none</p> <p>CTD upcasts: max 2000 dbar up to 6 dbar in 2 dbar bins. 17 cut points per profile Send the deepest 1 upcasts in each 6-hour period. Minimum depth to trigger collection of cast: 1000m in hour 1 600m in hour 2 300m in hour 3 100m in hour 4 50m in hour 5 25m in hour 6 or 20% greater than current maximum.</p> <p>Sample CTD sensor every 1 seconds. Temperature: Collected, Stored. Valid range: -2.5 to 30.2</p> <p>degC</p> <p>Conductivity: Collected, Not stored. Salinity: Calculated, Stored. Valid range: 28.9 to 37.1</p> <p>No GPS data</p> <p>TRANSMISSION BUFFERS (in RAM): Dive in groups of 3 (6.25 days @ 10mins/dive): 300 = 1200 bytes No 'deep' dives Haulout: 30 = 120 bytes 6-hour summaries in groups of 3 (7.5 days): 10 = 40 bytes No berniegrams No timelines Cruise: 30 = 120 bytes No diving periods No spot depths No emergence records No Duration histograms No Max depth histograms CTD casts (7.5 days): 30 = 120 bytes No GPS fixes</p> <p>TOTAL 1600 bytes (of about 21000 available)</p> <p>MAIN BUFFERS (in 6.2 Mb Flash): Dive in groups of 3 (416.667 days @ 10mins/dive): 20000 x 100 bytes = 2000000 bytes No 'deep' dives Haulout: 3000 x 16 bytes = 48000 bytes 6-hour summaries in groups of 3 (450 days): 600 x 68 bytes = 40800 bytes No berniegrams No timelines Cruise: 3000 x 16 bytes = 48000 bytes No diving periods No spot depths No emergence records No Duration histograms No Max depth histograms</p>
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	<p>CTD casts (500 days): 2000 x 164 bytes = 328000 bytes No GPS fixes</p> <p>TOTAL 2407 kb (from 6333 kb available)</p> <p>PAGE CONTENTS (256 bits - 9 overhead):</p> <p>PAGE 0:</p> <p>PTT NUMBER OVERHEAD (28-bit code) -----[8 bits: 0 - 7]</p> <p>PAGE NUMBER -----[3 bits: 8 - 10]</p> <p>DIAGNOSTICS in format 0:</p> <p>TX number: wraparound 11 bits in units of 32 (range: 0 to 65504) -----[11 bits: 11 - 21]</p> <p>DIVE group in format 0: Normal dives transmitted in groups of 3 Time of start of last dive: max 5 days 12 hours @ 30 secs= 15840) tx as raw 14 bits in units of 1 (range: 0 to 16383) (recommended sell-by 5 days 11 hours) Sell-by range: 5 days Number of records: raw 2 bits in units of 1 (range: 0 to 3) Reason for end: -- not transmitted -- Group number: wraparound 8 bits in units of 1 (range: 0 to 255) Max depth: -- not transmitted -- Dive duration: odlog 1/6 in units of 30 s (range: 0 to 5715 s) Mean speed: -- not transmitted -- Profile data (4 depths/times, 0 speeds): Depth profile: odlog 2/6 in units of 25 dm (range: 0 to 23887.5 dm) Profile times: raw 5 bits in units of 32.2581 permille (range: 0 to 1000 permille) Speed profile: -- not transmitted -- Residual: raw 2 bits in units of 60 (range: 0 to 180) Calculation time: -- not transmitted -- Surface duration: odlog 2/4 in units of 2.5 s (range: 0 to 588.75 s) cf. cruise starts after 9 mins (540 secs) Dive area: -- not transmitted -- -----[225 bits: 22 - 246]</p> <p>Available bits used exactly === End of page 0 ===</p> <p>PAGE 1:</p> <p>PTT NUMBER OVERHEAD (28-bit code) -----[8 bits: 0 - 7]</p> <p>PAGE NUMBER -----[3 bits: 8 - 10]</p> <p>DIAGNOSTICS in format 1:</p> <p>Max depth ever: odlog 1/4 in units of 500 dm (range: 0 to 23250 dm) -----[5 bits: 11 - 15]</p>
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	<p>15)</p> <p>CRUISE group in format 0: Number of records: raw 1 bits in units of 1 (range: 0 to 1) Cruise number: wraparound 4 bits in units of 1 (range: 0 to 15)</p> <p>Start time: -- not transmitted -- End time: max 5 days 12 hours @ 2 mins= 3960 tx as raw 12 bits in units of 1 (range: 0 to 4095) (recommended sell-by 5 days 11 hours) Sell-by range: 5 days 4 hours Duration: raw 9 bits in units of 120 s (range: 0 to 61320 s) cf. Max duration is 16 hours Speed: -- not transmitted -- Reason for end: -- not transmitted -- -----[26 bits: 16 - 41]</p> <p>to 7)</p> <p>HAULOUT in format 0: Number of records: raw 1 bits in units of 1 (range: 0 to 1) Haulout number: wraparound 3 bits in units of 1 (range: 0 to 7)</p> <p>Start time: -- not transmitted -- End time: max 5 days 12 hours @ 2 mins= 3960 tx as raw 12 bits in units of 1 (range: 0 to 4095) (recommended sell-by 5 days 11 hours) Sell-by range: 5 days 4 hours Duration: raw 9 bits in units of 120 s (range: 0 to 61320 s) cf. Max duration is 16 hours Reason for end: -- not transmitted -- Contiguous: -- not transmitted -- -----[25 bits: 42 - 66]</p> <p>SUMMARY group in format 0: Transmitted in groups of 3 Record could be in buffer for 7 days 12 hours End time: max 7 days @ 6 hours= 28 tx as raw 5 bits in units of 1 (range: 0 to 31) (recommended sell-by 6 days 17 hours) Sell-by range: 7 days Number of records: raw 1 bits in units of 1 (range: 0 to 1) Cruising time: -- not transmitted -- Haulout time: raw 6 bits in units of 15.873 permille (range: 0 to 1000 permille) Dive time: raw 6 bits in units of 15.873 permille (range: 0 to 1000 permille) Deep Dive time: -- not transmitted -- Normal dives: Avg max dive depth: odlog 2/6 in units of 25 dm (range: 0 to 23887.5 dm) SD max dive depth: odlog 2/4 in units of 50 dm (range: 0 to 11775 dm) Max max dive depth: odlog 2/6 in units of 25 dm (range: 0 to 23887.5 dm) Avg dive duration: odlog 1/6 in units of 30 s (range: 0 to 5715 s) SD dive duration: odlog 1/4 in units of 60 s (range: 0 to 2790 s) Max dive duration: odlog 1/6 in units of 30 s (range: 0 to 5715 s) Avg speed in dive: -- not transmitted -- Number of dives: odlog 1/4 in units of 2 (range: 0 to 93)</p> <p>Deep dives: Avg max dive depth: -- not transmitted -- SD max dive depth: -- not transmitted -- Max max dive depth: -- not transmitted -- Avg dive duration: -- not transmitted -- SD dive duration: -- not transmitted -- Max dive duration: -- not transmitted -- Avg speed in dive: -- not transmitted -- Number of dives: -- not transmitted -- Avg SST: -- not transmitted -- -----[180 bits: 67 - 246]</p>
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Available bits used exactly
=== End of page 1 ===

PAGE 2:

PTT NUMBER OVERHEAD (28-bit code)
-----[8 bits: 0 - 7]

PAGE NUMBER
-----[3 bits: 8 - 10]

CTD in format 0:

End time: max 7 days @ 10 mins= 1008
tx as raw 10 bits in units of 1 (range: 0 to 1023)
(recommended sell-by 6 days 23 hours)

Sell-by range: 6 days 18 hours

CTD cast number: -- not transmitted --

Min pressure: -- not transmitted --

Max pressure: raw 10 bits in units of 2 dbar (range: 6 to 2052 dbar)

Min temperature: raw 15 bits in units of 1 (range: 2500 to 35267 = -2.5 to 30.267 °C in steps of 0.001 °C)

Max temperature: raw 15 bits in units of 1 (range: 2500 to 35267 = -2.5 to 30.267 °C in steps of 0.001 °C)

cf. Valid temperatures: -2.5 to 30.2 degC

Min salinity: raw 12 bits in units of 2 mPSU (range: 28900 to 37090 mPSU)

Max salinity: raw 12 bits in units of 2 mPSU (range: 28900 to 37090 mPSU)

cf. Valid salinity: 28.9 to 37.1

Number of samples: -- not transmitted --

9 profile points 0 to 8 (from total of 17 cut points):

First 8 pressures are fixed

Min pressure is fixed

Temperature: raw 10 bits in units of 0.977517 permille (range: 0 to 1000 permille)

Temperature residual: -- not transmitted --

Salinity: raw 8 bits in units of 3.92157 permille (range: 0 to 1000 permille)

Salinity residual: -- not transmitted --

Temperature bounds : -- not transmitted --

Conductivity bounds : -- not transmitted --

Salinity bounds : -- not transmitted --

-----[236 bits: 11 - 246]

Available bits used exactly
=== End of page 2 ===

PAGE 3:

PTT NUMBER OVERHEAD (28-bit code)
-----[8 bits: 0 - 7]

PAGE NUMBER
-----[3 bits: 8 - 10]

CTD in format 1:

End time: max 7 days @ 10 mins= 1008
tx as raw 10 bits in units of 1 (range: 0 to 1023)
(recommended sell-by 6 days 23 hours)

Sell-by range: 6 days 18 hours

CTD cast number: -- not transmitted --

Min pressure: -- not transmitted --

Max pressure: -- not transmitted --

Min temperature: -- not transmitted --

Max temperature: -- not transmitted --

cf. Valid temperatures: -2.5 to 30.2 degC

Min salinity: -- not transmitted --

Max salinity: -- not transmitted --
 cf. Valid salinity: 28.9 to 37.1
 Number of samples: -- not transmitted --
 8 profile points 9 to 16 (from total of 17 cut points):
 Max pressure is sent separately
 7 pressure bins: raw 9 bits in units of 1 bin
 (range: 0 to 511 bin)
 Temperature: raw 10 bits in units of 0.977517
 permille (range: 0 to 1000 permille)
 Temperature residual: raw 7 bits in units of 1 mdegC per
 sample (range: 0 to 127 mdegC per sample)
 Pressure already sent
 Salinity: raw 8 bits in units of 3.92157 permille
 (range: 0 to 1000 permille)
 Salinity residual: raw 7 bits in units of 1 mPSU per sample
 (range: 0 to 127 mPSU per sample)
 Temperature bounds : raw 2 bits in units of 1 lo/hi (range:
 0 to 3 lo/hi)
 Conductivity bounds : -- not transmitted --
 Salinity bounds : raw 2 bits in units of 1 lo/hi (range: 0 to 3
 lo/hi)
 -----[235 bits: 11 - 245]

 UNUSED
 -----[1 bits: 246 - 246]

 === End of page 3 ===


 PAGE 4:
 PTT NUMBER OVERHEAD (28-bit code)
 -----[8 bits: 0 - 7]

 PAGE NUMBER
 -----[3 bits: 8 - 10]

 CTD in format 2:

 End time: max 3 days 6 hours @ 10 mins= 468
 tx as raw 9 bits in units of 1 (range: 0 to 511)
 (recommended sell-by 3 days 5 hours)
 Sell-by range: 3 days
 CTD cast number: -- not transmitted --
 Min pressure: -- not transmitted --
 Max pressure: raw 10 bits in units of 2 dbar (range: 6 to
 2052 dbar)
 Min temperature: raw 15 bits in units of 1 (range: 2500 to
 35267 = -2.5 to 30.267 °C in steps of 0.001 °C)
 Max temperature: raw 15 bits in units of 1 (range: 2500 to
 35267 = -2.5 to 30.267 °C in steps of 0.001 °C)
 cf. Valid temperatures: -2.5 to 30.2 degC
 Min salinity: raw 12 bits in units of 2 mPSU (range: 28900
 to 37090 mPSU)
 Max salinity: raw 12 bits in units of 2 mPSU (range: 28900
 to 37090 mPSU)
 cf. Valid salinity: 28.9 to 37.1
 Number of samples: -- not transmitted --
 9 profile points 0 to 8 (from total of 17 cut points):
 First 8 pressures are fixed
 Min pressure is fixed
 Temperature: raw 10 bits in units of 0.977517
 permille (range: 0 to 1000 permille)
 Temperature residual: -- not transmitted --
 Salinity: raw 8 bits in units of 3.92157 permille
 (range: 0 to 1000 permille)
 Salinity residual: -- not transmitted --
 Temperature bounds : -- not transmitted --
 Conductivity bounds : -- not transmitted --
 Salinity bounds : -- not transmitted --
 -----[235 bits: 11 - 245]

	<p>UNUSED -----[1 bits: 246 - 246]</p> <p>=== End of page 4 ===</p> <p>PAGE 5:</p> <p>PTT NUMBER OVERHEAD (28-bit code) -----[8 bits: 0 - 7]</p> <p>PAGE NUMBER -----[3 bits: 8 - 10]</p> <p>DIAGNOSTICS in format 2:</p> <p>Number of resets: wraparound 2 bits in units of 1 (range: 0 to 3) -----[2 bits: 11 - 12]</p> <p>CTD in format 3:</p> <p>End time: max 3 days 6 hours @ 10 mins= 468 tx as raw 9 bits in units of 1 (range: 0 to 511) (recommended sell-by 3 days 5 hours)</p> <p>Sell-by range: 3 days</p> <p>CTD cast number: -- not transmitted --</p> <p>Min pressure: -- not transmitted --</p> <p>Max pressure: -- not transmitted --</p> <p>Min temperature: -- not transmitted --</p> <p>Max temperature: -- not transmitted -- cf. Valid temperatures: -2.5 to 30.2 degC</p> <p>Min salinity: -- not transmitted --</p> <p>Max salinity: -- not transmitted -- cf. Valid salinity: 28.9 to 37.1</p> <p>Number of samples: -- not transmitted --</p> <p>8 profile points 9 to 16 (from total of 17 cut points): Max pressure is sent separately 7 pressure bins: raw 9 bits in units of 1 bin (range: 0 to 511 bin)</p> <p>Temperature: raw 10 bits in units of 0.977517 permille (range: 0 to 1000 permille)</p> <p>Temperature residual: raw 7 bits in units of 1 mdegC per sample (range: 0 to 127 mdegC per sample)</p> <p>Pressure already sent</p> <p>Salinity: raw 8 bits in units of 3.92157 permille (range: 0 to 1000 permille)</p> <p>Salinity residual: raw 7 bits in units of 1 mPSU per sample (range: 0 to 127 mPSU per sample)</p> <p>Temperature bounds : raw 2 bits in units of 1 lo/hi (range: 0 to 3 lo/hi)</p> <p>Conductivity bounds : -- not transmitted --</p> <p>Salinity bounds : raw 2 bits in units of 1 lo/hi (range: 0 to 3 lo/hi)</p> <p>-----[234 bits: 13 - 246]</p> <p>Available bits used exactly</p> <p>=== End of page 5 ===</p>
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Deployment		
Immobilisation	Application Blowpipe dart 15ml, 80/2mm needle Induction dose 14:25 12.5ml Zoletil IM@100mg/ml Top-up dose 14:55 20.0ml Ketamine@100mg/ml Induction complete 15:00 Follow-up dose --- Deployment 15:00 Onset of recovery 15:28 End of recovery 16:07 Anesthesia level 4 http://doi.pangaea.de/10.1594/PANGAEA.737045	
Comment	Seal tag: none Deployment site: Refugio Elephante Prev. deployment: none	
Tag deployed	2010-03-23T14:25:00	-62.2560 -59.2236
Tag retrieved		
First transmission	2010-03-23T14:40:14	-62.243 -58.618
Last transmission	2010-10-06T05:35:18	-54.271 -36.624